BRIDGEABLE FOUR-CHANNEL POWER AMPLIFIER

AMPLIFICATEUR DE PUISSANCE PONTABLE A QUATRE VOIES

GM-X904

OWNER'S MANUAL
MODE D'EMPLOI

Thank you for purchasing this PIONEER product. It is designed to give you many years of enjoyment.

PIONEER SUGGESTS USING A PROFESSIONAL INSTALLER DUE TO THE COMPLEXITY OF THIS PRODUCT.

Please read all instructions and **WARNINGS** in this manual before attempting operation. Should you have any questions contact your nearest Pioneer authorized dealer or installation specialist.

Important
The serial number of this amplifier is written on the bottom of this unit. For your own security and convenience, write it down on the enclosed warranty card. Keep the card handy for future reference.

Nous vous remercions sincèrement pour l'achat de ce produit PIONEER. Cet équipement a été conçu pour vous donner une entière satisfaction durand de longues années.

PIONEER RECOMMANDE D'UTILISER UN TECHNICIEN DE MONTAGE PROFESSIONNEL EN RAISON DE LA COMPLEXITE DE CE PRODUIT.

Il est également recommandé de lire toutes les instructions, et tous les **AVERTISSEMENTS** de ce manuel avant d'opérer cet équipement. Si vous avez des questions, contactez votre fournisseur Pioneer autorisé le plus proche, ou votre spécialiste pour l'installation.

PIONEER®

The Art of Entertainment

ENGLISH

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FRANÇAIS

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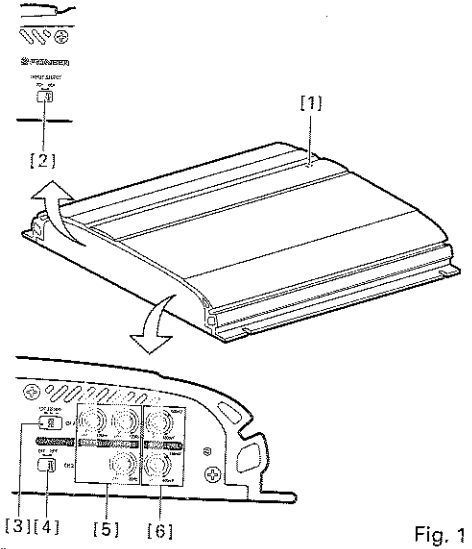

Fig. 1

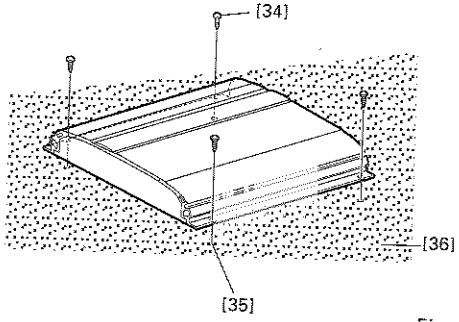

Fig. 3

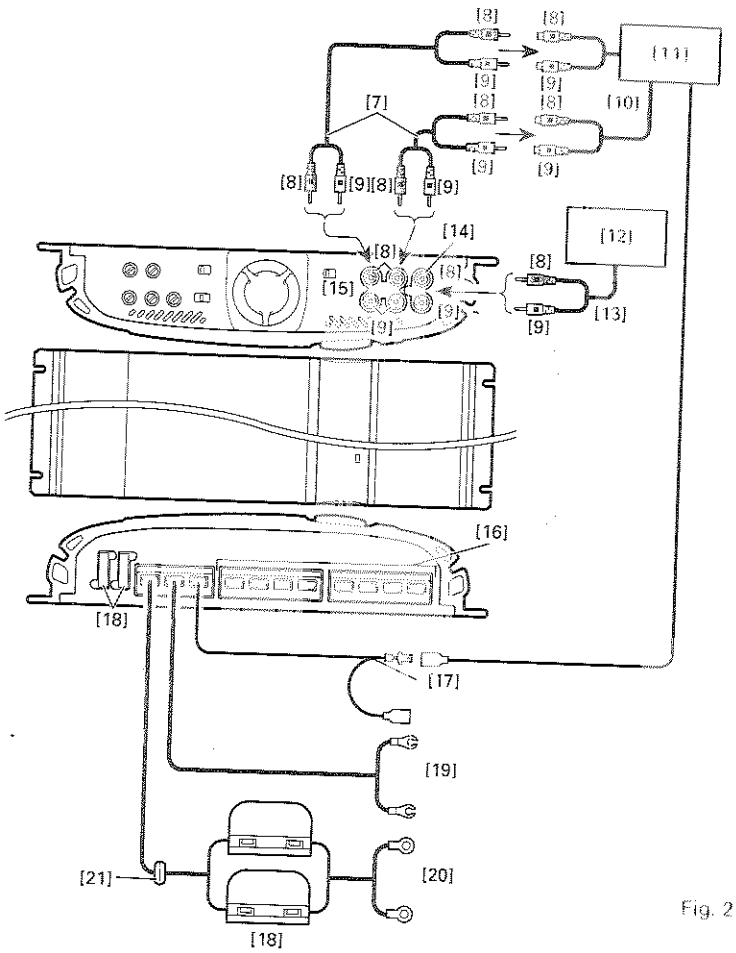

Fig. 2

Dear Customer:

Selecting fine audio equipment such as the unit you've just purchased is only the start of your musical enjoyment. Now it's time to consider how you can maximize the fun and excitement your equipment offers. This manufacturer and the Electronic Industries Association's Consumer Electronics Group want you to get the most out of your equipment by playing it at a safe level. One that lets the sound come through loud and clear without annoying blaring or distortion—and, most importantly, without affecting your sensitive hearing.

Sound can be deceiving. Over time your hearing "comfort level" adapts to higher volumes of sound. So what sounds "normal" can actually be loud and harmful to your hearing. Guard against this by setting your equipment at a safe level BEFORE your hearing adapts.

To establish a safe level:

- Start your volume control at a low setting.
- Slowly increase the sound until you can hear it comfortably and clearly, and without distortion.

Once you have established a comfortable sound level:

- Set the dial and leave it there.

Taking a minute to do this now will help to prevent hearing damage or loss in the future. After all, we want you listening for a lifetime.

We Want You Listening For A Lifetime

Used wisely, your new sound equipment will provide a lifetime of fun and enjoyment. Since hearing damage from loud noise is often undetectable until it is too late, this manufacturer and the Electronic Industries Association's Consumer Electronics Group recommend you avoid prolonged exposure to excessive noise. This list of sound levels is included for your protection.

Decible Level	Example
30	Quiet library, soft whispers
40	Living room, refrigerator, bedroom away from traffic
50	Light traffic, normal conversation, quiet office
60	Air conditioner at 20 feet, sewing machine
70	Vacuum cleaner, hair dryer, noisy restaurant
80	Average city traffic, garbage disposals, alarm clock at two feet.
THE FOLLOWING NOISES CAN BE DANGEROUS UNDER CONSTANT EXPOSURE	
90	Subway, motorcycle, truck traffic, lawn mower
100	Garbage truck, chain saw, pneumatic drill
120	Rock band concert in front of speakers, thunderclap
140	Gunshot blast, jet plane
180	Rocket launching pad

Information courtesy of the Deafness Research Foundation.

Symbols

The following two symbols are used in this manual.

⚠ CAUTION

— never do this.

This symbol indicates dangerous actions which must be avoided.

⊘ Note

— follow the instructions carefully.

This symbol indicates action which can cause the equipment to fail if it is wrongly performed.

⚠ WARNING

- *Do not touch the amplifier with wet hands. Otherwise you may get an electric shock. Also, do not touch the amplifier when it is wet.*
- *For traffic safety and to maintain safe driving conditions, keep the volume low enough so that you can still hear normal traffic sound.*
- *Check the connections of the power supply and speakers if the fuse of the sold separately special red battery wire [RD-223] or the amplifier fuse blows. Detect the cause and solve the problem, then replace the fuse with another one of the same size and rating.*
- *To prevent malfunction of the amplifier and speakers, the protective circuit will cut the power supply to the amplifier (sound will stop) when an abnormal condition occurs. In such a case, switch the power to the system OFF and check the connection of the power supply and speakers. Detect the cause and solve the problem.*
- *Contact the dealer if you cannot detect the cause.*
- *To prevent an electric shock or short-circuit during connection and installation, be sure to disconnect the negative (–) terminal of the battery beforehand.*
- *Always use the special red battery and ground wire [RD-223], which is sold separately. Connect the special red battery wire directly to the car battery positive terminal (+) and the black ground wire to the car body. (The special red battery and ground wire [RD-223] are designed so that the amplifier can be safely connected.)*
- *Confirm that no parts are behind the panel when drilling a hole for installation of the amplifier. Be sure to protect all cables and important equipment such as fuel lines, brake lines and the electrical wiring from damage.*
- *To prevent an electric shock, do not install the amplifier in places where it might become in contact with liquids.*
- *To ensure proper heat dissipation of the amplifier, be sure of the following during installation.*
  - *— Allow adequate space above the amplifier for proper ventilation. Take special care not to block the cooling fan side of the amplifier.*
  - *— Do not cover the amplifier with a floor mat or carpet.*

Setting the Unit

(Fig. 1)

[1] Power Indicator

The power indicator lights when the power is switched on.

[2] RCA Input Select Switch

For two-channel input, slide this switch to the left. For four-channel input, slide this switch to the right.

[3] Speaker Out A: LPF (Low-Pass Filter)/HPF (High-Pass Filter) Select Switch

Set the LPF/HPF select switch as follows according to the type of speaker that is connected to the speaker output connector and the car stereo system:

LPF/HPF Select Switch	Audio frequency range to be output	Speaker Type	Remarks
LPF (left)	Very-low-frequency range*	Sub-woofer	Connect a sub-woofer.
OFF (center)	Very-low-frequency range to high-frequency range	Other than sub-woofer	
HPF (right)	Low-frequency range to high-frequency range*	Other than sub-woofer	If you want to cut the very-low-frequency range* because it is not necessary for the speaker you use.

* The cut off frequencies of the LPF and HPF can be adjusted in the range 50 to 120 Hz. See the "Cut Off Frequency Control" section for details of the cut off frequency adjustment.

[4] Speaker Out B: HPF (High-Pass Filter) Select Switch

Set the HPF select switch as follows according to the car stereo system and the type of speaker connected to the speaker output:

HPF Select Switch	Audio frequency range to be output	Speaker Type	Remarks
OFF (left)	Very-low-frequency range to high-frequency range	Other than Sub-woofer	
HPF (right)	Low-frequency range to high-frequency range*	Other than sub-woofer	If you want to cut the very-low-frequency range* because it is not necessary for the speaker you use.

* The cut off frequencies of the HPF can be adjusted in the range 50 to 120 Hz. See the "Cut Off Frequency Control" section for details of the cut off frequency adjustment.

[5] Cut Off Frequency Control

The amplifier enables you to adjust the cut off frequency in the range 50 to 120 Hz if the LPF/HPF switch for speaker output A and the HPF select switch for speaker output B are set to LPF or HPF.

- If the cut off frequencies of both speaker output A and B are adjusted, they must be set to the same value. If they are different, unnatural sounds may be output.

Speaker Output A: LPF Cut Off Frequency Control

The frequencies equal to and lower than the specified cut off frequency are output. Specify the cut off frequency fit for the speaker and car stereo system.

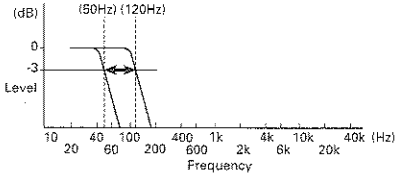

Fig. 4

Speaker Output A and B: HPF Cut Off Frequency Control

The frequencies equal to and higher than the specified cut off frequency are output. Specify the cut off frequency fit for the speaker and car stereo system.

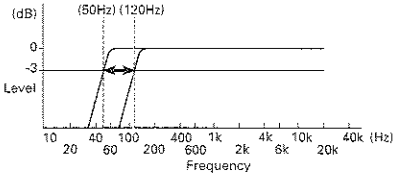

Fig. 5

[6] Input Level Adjustment

Adjusting the input level controls A and B will help match the output of the car stereo to the Pioneer amplifier. Input level control A is used to adjust the volume of speaker output A; Input level control B is used to adjust the volume of speaker ouput B. Normally, set the switch to the "500 mV" position. If the output is low even when the volume of the car stereo is turned up, turn these controls clockwise. If there is distortion when the volume of the car stereo is turned up, turn these controls counter-clockwise.

- If you only use one input plug, set the input level controls for speaker outputs A and B to the same position.
- Set the input level control to 500 mV when this amplifier is connected to a Pioneer car stereo with RCA output jacks. If the sound is too low or distorts, adjust the input level control.

Connecting the Unit

⚠ CAUTION

- *Remove the negative (-) terminal of the battery to avoid the risk of a short-circuit and damage to the unit.*
- *Secure the wiring with cable clamps or adhesive tape. To protect the wiring, wrap adhesive tape around them where they lie against metal parts.*
- *Do not route wires where they will get hot, for example where the heater will blow over them. If the insulation heats up, it may become damaged, resulting in a short-circuit through the vehicle body.*
- *Make sure that wires will not interfere with moving parts of the vehicle, such as the gearshift, handbrake or seat sliding mechanism.*
- *Do not shorten any wires. Otherwise the protection circuit may fail to work when it should.*
- *Never feed power to other equipment by cutting the insulation of the power supply wire to tap from the wire. The current capacity of the wire will be exceeded, causing overheating.*
- *Always use the special red battery and ground wire [RD-223], which is sold separately. Connect the special red battery wire directly to the car battery positive terminal (+) and the black ground wire to the car body. (The special red battery and ground wire [RD-223] are designed so that the amplifier can be safely connected.)*

⊘ To prevent damage

- *Do not ground the speaker wire directly or connect a negative (–) lead wire for several speakers.*
- *Speakers to be connected to the amplifier should conform with the standards listed below. Otherwise damage will occur to the speaker. The speaker impedance must be 2 to 8 ohms.*

Speaker		Power
Channel	Type	
Four-channel	Sub-woofer	Nominal input: Min. 50 W
	Other than sub-woofer	Max. input: Min. 100 W
Two-channel	Sub-woofer	Nominal input: Min. 150 W
	Other than sub-woofer	Max. input: Min. 300 W
Three-channel Speaker output A	Sub-woofer	Nominal input: Min. 50 W
	Other than sub-woofer	Max. input: Min. 100 W
Three-channel Speaker output B	Sub-woofer	Nominal input: Min. 150 W
	Other than sub-woofer	Max. input: Min. 300 W

- This unit is for vehicles with a 12-volt battery and negative grounding. Before installing it in a recreational vehicle, truck, or bus, check the battery voltage.
- Install and route the sold separately special red battery wire [RD-223] as faraway as possible from the speaker wires. Install and route the sold separately special red battery wire, ground wire [RD-223], speaker wires, and the amplifier as faraway as possible from the antenna, antenna cable and tuner.

⊘ If many units are connected

- *If the car stereo is kept on for a long time while the engine is at rest or idling, the battery may go dead. Turn the car stereo off when the engine is at rest or idling.*
- *If the blue wire of the amplifier is connected to the power terminal through the ignition switch (12 VDC), the amplifier will always be on when the ignition is on— regardless of whether the car stereo is on or off. Because of this, the battery could go dead if the engine is at rest or idle.*

(Fig. 2)

[7] Connecting wires with RCA plugs (sold separately)
For details on how to connect to RCA input jacks A and B, see the "Connecting the Speakers and Input wires" section.
[8] Red
[9] White
[10] External Output
[11] Car stereo with RCA output jacks

[12] Amplifier with RCA input jack
[13] RCA input
[14] RCA output jack
[15] RCA input jack A, B
[16] Speaker output terminals
See the "Connecting the Speakers and Input wires" section for speaker connection instructions.
[17] Blue [RD-223]
(sold separately)
Connect the male terminal of this wire to the blue wire of the car stereo (system remote control terminal). The female terminal can be connected to the auto-antenna relay control terminal.
If the car stereo does not have a system remote control terminal, connect the male terminal to the power terminal through the ignition switch.
[18] Fuse (Special red battery wire: 30 A × 2, Amplifier: 20 A × 2)
[19] Ground wire (black) [RD-223]
(sold separately)
Connect to metal body or chassis.
[20] Special red battery wire [RD-223]
(sold separately)
After making all other connections to the amplifier, connect the battery wire terminal of the amplifier to the positive (+) terminal of the battery.
[21] Grommet

Connecting the Power Terminal

- *Always use the special red battery and ground wire [RD-223], which is sold separately. Connect the special red battery wire directly to the car battery positive terminal (+) and the black ground wire to the car body. (The special red battery and ground wire [RD-223] are designed so that the amplifier can be safely connected.)*

1. Pass the special red battery wire from the engine compartment to the interior of the vehicle.

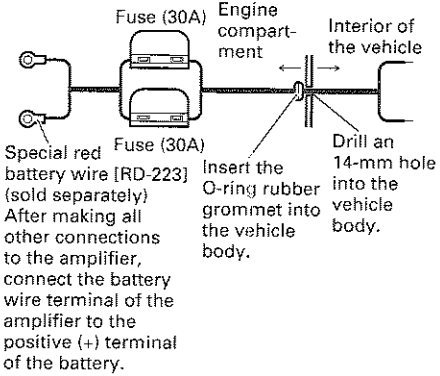
Fuse (30A)
Engine compartment
Interior of the vehicle
Fuse (30A)
Drill an 14-mm hole into the vehicle body.
Special red battery wire [RD-223] (sold separately) After making all other connections to the amplifier, connect the battery wire terminal of the amplifier to the positive (+) terminal of the battery.
Insert the O-ring rubber grommet into the vehicle body.

Fig. 6

2. Twist the sold separately special red battery wire, ground wire, and system remote control wire [RD-223].

Fig. 7

3. Connect the wires to the terminal.

- Fix the wires securely with the terminal screws.

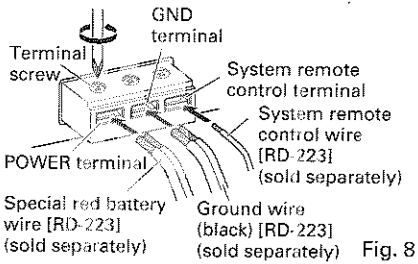
GND terminal
Terminal screw
System remote control terminal
System remote control wire [RD-223] (sold separately)
POWER terminal
Special red battery wire [RD-223] (sold separately)
Ground wire (black) [RD-223] (sold separately)

Fig. 8

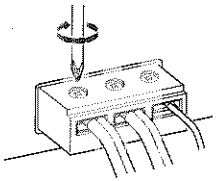

Fig. 9

ENGLISH

4. Bundle the wires at a point about 100 mm away from the terminal with a clamper [RD-223].

- Be sure to fix the wires securely with the clamper

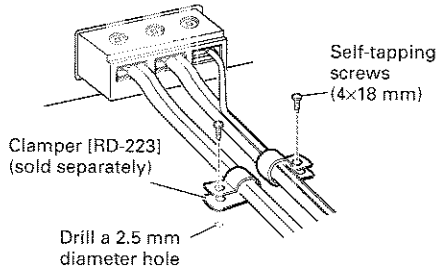

Fig. 10

Connecting the Speakers and Input wires

The speaker output mode can be four-channel, three-channel (stereo + mono) or two-channel (stereo, mono). Connect the speakers according to figures on the following pages.

Four-channel mode

(RCA terminal side)

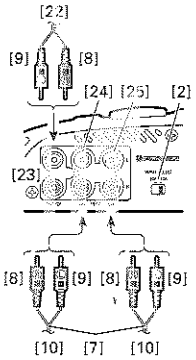

Fig. 11

(Speaker output terminal side)

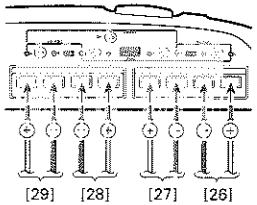

Fig. 12

(Fig. 11, 12)

[2] RCA Input Select Switch
For two-channel input, slide this switch to the left. For four-channel input, slide this switch to the right.
[7] Connecting wires with RCA plugs (sold separately)
[8] Red
[9] White
[10] From car stereo (RCA output)
If only one input plug is used, such as when the car stereo has only one output (RCA output), connect the plug to RCA input A, and do not connect any plug to RCA input B.
[22] To a separate amplifier (RCA input)
[23] RCA output jack
[24] RCA input jack A
[25] RCA input jack B

- Connect the front or rear output plugs to jacks [24] or [25], according to your system.

[26] Speaker out B: Speaker (left)
[27] Speaker out B: Speaker (right)
[28] Speaker out A: Speaker (left)
[29] Speaker out A: Speaker (right)

Three-channel mode

(RCA terminal side)

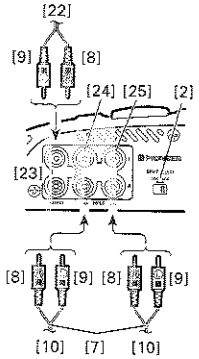

Fig. 13

(Speaker output terminal side)

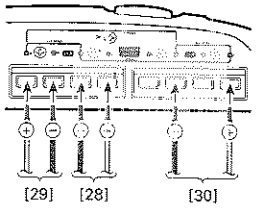

Fig. 14

(Fig. 13, 14)

[2] RCA Input Select Switch
For two-channel input, slide this switch to the left. For four-channel input, slide this switch to the right.
[7] Connecting wires with RCA plugs (sold separately)
[8] Red
[9] White
[10] From car stereo (RCA output)
If only one input plug is used, such as when the car stereo has only one output (RCA output), connect the plug to RCA input A, and do not connect any plug to RCA input B.
[22] To a separate amplifier (RCA input)
[23] RCA output jack
[24] RCA input jack A
[25] RCA input jack B
• Connect the front or rear output plugs to jacks [24] or [25], according to your system.
[28] Speaker out A: Speaker (left)
[29] Speaker out A: Speaker (right)
[30] Speaker out B: Speaker (mono)

Two-channel mode (stereo)

(RCA terminal side)

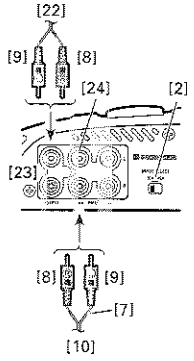

Fig. 15

(Speaker output terminal side)

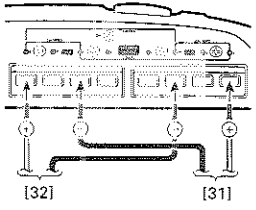

Fig. 16

(Fig. 15, 16)

[2] RCA Input Select Switch
Slide this switch to the left.
[7] Connecting wire with RCA plug (sold separately)
[8] Red
[9] White
[10] From car stereo (RCA output)
[22] To a separate amplifier (RCA input)
[23] RCA output jack
[24] RCA input jack A
[31] Speaker (left)
[32] Speaker (right)

Two-channel mode (mono)

(RCA terminal side)

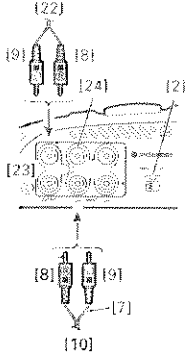

Fig. 17

(Speaker output terminal side)

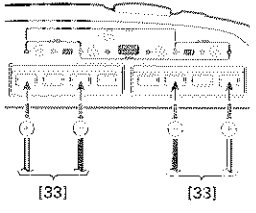

Fig. 18

(Fig. 17, 18)
[2] RCA Input Select Switch
Slide this switch to the left.
[7] Connecting wire with RCA plug (sold separately)
[8] Red
[9] White
[10] From car stereo (RCA output)
[22] To a separate amplifier (RCA input)
[23] RCA output jack
[24] RCA input jack A
[33] Speaker (mono)

Connecting the Speaker Output Terminals

1. Expose the end of the speaker wires by about 10 mm and twist it using nippers or a cutter.

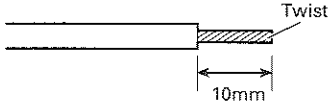

Fig. 19

2. Connect the speaker wires to the speaker output terminals.

- Fix the speaker wires securely with the terminal screws.

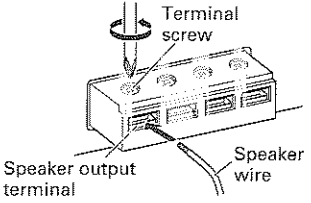

Fig. 20

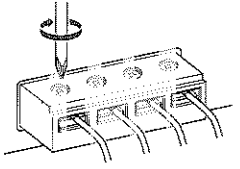

Fig. 21

Installation

⚠ CAUTION

- *Do not install in:*
  - *— Places where it could injure the driver or passengers if the vehicle stops suddenly.*
  - *— Places where it may interfere with the driver, such as on the floor in front of the driver's seat.*
- *Make sure that wires are not caught in the sliding mechanism of the seats, resulting in a short-circuit.*
- *Confirm that no parts are behind the panel when drilling a hole for installation of the amplifier. Protect all cables and important equipment such as fuel lines, brake lines and electrical wiring from damage.*
- *Install tapping screws in such a way that the screw tip does not touch any wire. This is important to prevent wires from being cut by vibration of the car, which can result in fire.*
- *To prevent electric shock, do not install the amplifier in places where it might come in contact with liquids.*
- *To ensure proper installation, use the supplied parts in the manner specified. If any parts other than the supplied ones are used, they may damage internal parts of the amplifier, or they may become loose causing the amplifier to shut down.*

ENGLISH

To prevent malfunction

- *To ensure proper heat dissipation of the amplifier, be sure of the following during installation.*
  - *— Allow adequate space above the amplifier for proper ventilation. Take special care not to block the cooling fan side of the amplifier.*
  - *— Do not cover the amplifier with a floor mat or carpet.*
- *Do not install the amplifier near a door where it may get wet.*
- *Do not install the amplifier on unstable places such as the spare tire board.*
- *The best location for installation differs with the car model and installation location. Secure the amplifier at a sufficiently rigid location.*
- *Make temporary connections first and check that the amplifier and the system operate properly.*
- *After installing the amplifier, confirm that the spare tire, jack and tools can be easily removed.*

Example of installation on the floor mat or on the chassis

1. Place the amplifier where it is to be installed. Insert the supplied tapping screws (4 × 18 mm) into the screw holes. Push on the screws with a screwdriver so they make marks where the installation holes are to be located.
2. Drill 2.5-mm diameter holes at the point marked, and install the amplifier, either on the carpet or directly to the chassis.

(Fig. 3)
[34] Tapping-screws (4 × 18 mm)
[35] Drill a 2.5-mm-diameter hole
[36] Floor mat or chassis

Precautions

In case of trouble
When the unit does not operate properly, contact your dealer or the nearest authorized PIONEER Service Station.
In the United States please call 1-800-421-1404 for product information or your nearest service center or 1-800-228-7221 for information on parts.

Specifications

Power source .....14.4 V DC (10.8 — 15.6 V allowable)
Grounding system .....Negative type
Current consumption .....38 A (at continuous power, 4Ω)
Average current drawn* .....10 A (4Ω for four channels)
17 A (4Ω for two channels)
Fuse .....40 A
Dimensions .....250 (W) × 57.5 (H) × 310 (D) mm
[9-7/8 (W) × 2-1/4 (H) × 12-1/4 (D) in.]
Weight .....3.8 kg (4.3 lbs.)
Maximum power output .....100 W × 4 / 300 W × 2 (EIAJ)
Continuous power output
.....50 W × 4 (at 14.4V, 4Ω, 20 — 20,000 Hz, 0.04% THD)
150 W × 2 (at 14.4V, 4Ω, 20 — 20,000 Hz, 0.4% THD)
75 W × 4 (at 14.4V, 2Ω, 20 — 20,000 Hz, 0.4% THD)
50 W × 4 (at 12V, 4Ω, 20 — 20,000 Hz, 0.04% THD)
120 W × 2 (at 12V, 4Ω, 20 — 20,000 Hz, 0.4% THD)
60 W × 4 (at 12V, 2Ω, 20 — 20,000 Hz, 0.4% THD)
Load impedance .....4Ω (2 — 8Ω allowable)
Frequency response .....10 — 80,000 Hz (+0 dB, –1 dB)
Signal-to-noise ratio .....105 dB (IHF – A network)
Distortion .....0.003% (10 W, 1 kHz)
Separation .....71 dB (1 kHz)
Low pass filter .....Cut off frequency: 50 — 120 Hz
Cut off slope: –12 dB/oct
High pass filter .....Cut off frequency: 50 — 120 Hz
Cut off slope: –12 dB/oct
Input level / impedance ..... 0.4 — 2 V/22 kΩ

These specifications were determined and are presented in accordance with specification standards established by the Ad Hoc Committee of Car Stereo Manufacturers.

Note:
Specifications and the design are subject to possible modification without notice due to improvements.

***Average current drawn**
The average current drawn is nearly the maximum current drawn by this unit when an audio signal is input. Use this value when working out total current drawn by multiple power amplifiers.

Spécifications

Alimentation.....CC 14,4 V (10,8 — 15,6 V admissible)
Mise à la masse.....Type négatif
Consommation courante .....38 A (à la puissance continue, 4Ω)
Consommation électrique moyenne*
.....10 A (4Ω pour quatre canaux)
17 A (4Ω pour deux canaux)
Fusible.....40 A
Dimensions .....250 (L) × 57.5 (H) × 310 (P) mm
Poids .....3,8 kg
Puissance de sortie maximum .....100 W × 4 / 300 W × 2 (EIAJ)
Puissance de sortie continue
.....50 W × 4 (à 14,4 V, 4 Ω, 20 — 20.000 Hz, 0,04% THD)
150 W × 2 (à 14,4 V, 4 Ω, 20 — 20.000 Hz, 0,4% THD)
75 W × 4 (à 14,4 V, 2 Ω, 20 — 20.000 Hz, 0,4% THD)
50 W × 4 (à 12 V, 4 Ω, 20 — 20.000 Hz, 0,04% THD)
120 W × 2 (à 12 V, 4 Ω, 20 — 20.000 Hz, 0,4% THD)
60 W × 4 (à 12 V, 2 Ω, 20 — 20.000 Hz, 0,4% THD)
Impédance de charge .....4 Ω (2 — 8 Ω admissible)
Réponse en fréquence.....10 — 80.000 Hz (+0 dB, –1 dB)
Rapport signal-bruit .....105 dB (réseau IHF – A)
Distorsion 0,003% (10W, 1kHz)
Diaphonie .....71 dB (1 kHz)
Filtre de passe-bas .....Fréquence de coupure: 50 — 120Hz
Pente de coupure: –12 dB/oct
Filtre de passe-haut .....Fréquence de coupure: 50 — 120Hz
Pente de coupure: –12 dB/oct
Niveau de entrée / impédance .....0,4 — 2 V/22 kΩ

Remarque:
Suite aux améliorations apportées à ces équipements, leurs caractéristiques et leur conception sont sujettes à modification sans préàvis.

***Consommation électrique moyenne**
La consommation électrique moyenne est presque la consommation maximum de cette unité, quand un signal audio est introduit. Utiliser cette valeur en cas de consommation totale par des amplificateurs de puissance multiples.

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